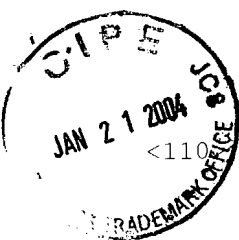


IN THE SEQUENCE LISTING

Replace the current sequence listing, both in computer and paper copy, with the attached. The undersigned hereby declares that, to the best of his knowledge, the paper copy and computer readable forms are identical to each other and to the information in the application as filed. No new matter is believed presented.



<110> Jager, Dirk
Scanlan, Matthew
Gure, Ali
Jager, Elke
Knuth, Alexander
Old, Lloyd
Chen, Yao-tseng

<120> Isolated Nucleic Acid Molecules Encoding Cancer Associated Antigens,
the Antigens per se, and Uses Thereof

<130> LUD 5615

<140> 09/451,739

<141> 1999-11-30

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<223> unknown

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<213> Homo sapiens

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cccatcgacc ccaacgaacc cacgtactgt ctgtgcaacc aggtctccta tggggagatg 660
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<211> 857

<212> DNA

<213> Homo sapiens

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ctttgtctcc aagcgttccc aaactgagta ccgggagacg acacaaaggg agggcggtga 180
cggatggcgc aggcgcggga gcgcctagg ctgctgggag tgggtggtccg gccgcggaat 240
ggagatcctg aaggagctag acgagtgcta cgagcgcttc agtcgcgaga cagacggggc 300
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ggtggacagc cactgtggagc tgttcgaggc gcagcaggag ctggggcgaca cagcggggcaa 480
cagcgggcaag gctggcgcgg acaggcccaa aggcgaggcg gcagcgcagg ctgacaagcc 540
caacagcaag cgctcacggc ggcagcgcaa caacgagaac cgtgagaacg cgtccagcaa 600
ccacgaccac gacgacggcg cctcggggcac acccaaggag aagaaggcca agacctccaa 660
gaagaagaag cgctccaagg ccaaggcgga gcgagaggcg tccccctgccg acctccccat 720
cgaccccaac gaaccacgt actgtctgtg caaccaggtc tcctatgggg agatgatcgg 780
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<211> 279

<212> PRT

<213> Homo sapiens

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Asn Val Ser Leu Met Arg Glu Ile Asp Ala Lys Tyr Gln Glu Ile Leu
35          40          45
Lys Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly
50          55          60
Ala Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg
65          70          75          80
Ser Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val
85          90          95
Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu
100         105         110
Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys
115         120         125
Val Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys
130         135         140
Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu
145         150         155         160
Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro
165         170         175
Lys Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Arg Ser Lys Ala
180         185         190
Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn
195         200         205
Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile
210         215         220
Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys
225         230         235         240
Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys
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35 40 45
Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys Val Gly Ala Asp Arg
50 55 60
Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys Pro Asn Ser Lys Arg
65 70 75 80
Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu Asn Ala Ser Ser Asn
85 90 95
His Asp His Asp Asp Gly Ala Ser Gly Thr Pro Lys Glu Lys Lys Ala
100 105 110
Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala Lys Ala Glu Arg Glu
115 120 125
Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn Glu Pro Thr Tyr Cys
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Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile Gly Cys Asp Asn Asp
145 150 155 160
Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys Val Gly Leu Asn His
165 170 175
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<211> 235

<212> PRT

<213> Homo sapiens

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35 40 45
Ser Gln Met Val Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser
50 55 60
His Val Glu Leu Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly
65 70 75 80
Asn Ser Gly Lys Val Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala
85 90 95
Gln Ser Asp Lys Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn
100 105 110
Glu Asn Arg Glu Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala
115 120 125
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130 135 140

Arg Ser Lys Ala Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro
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 Ile Asp Pro Asn Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr
 165 170 175
 Gly Glu Met Ile Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe
 180 185 190
 His Phe Ser Cys Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr
 195 200 205
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 ccagegagcc ctctacttgg gagatgatcc gctgcgacaa cgaatgcccc atcgagtggg 240
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21

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23

<210> 13
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23

<210> 14
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 cgtggtcgtg gttgctggac gcg

23

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<211> 512

<212> PRT

<213> Homo sapiens

<400> 16

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Glu	Gln	Thr	Leu	Arg	Ala	Asp	Glu	Ile	Leu	Pro	Ser	Glu	Ser	Lys	Gln
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Lys	Asp	Tyr	Glu	Glu	Ser	Ser	Trp	Asp	Ser	Glu	Ser	Leu	Cys	Glu	Thr
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Val	Ser	Gln	Lys	Asp	Val	Cys	Leu	Pro	Lys	Ala	Thr	His	Gln	Lys	Glu
		85					90					95			
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	130					135					140				
Pro	Ser	Ala	Phe	Glu	Pro	Ala	Ile	Glu	Met	Gln	Lys	Ser	Val	Pro	Asn
145					150					155				160	
Lys	Ala	Leu	Glu	Leu	Lys	Asn	Glu	Gln	Thr	Leu	Arg	Ala	Asp	Gln	Met
		165					170						175		
Phe	Pro	Ser	Glu	Ser	Lys	Gln	Lys	Lys	Val	Glu	Glu	Asn	Ser	Trp	Asp
	180						185					190			
Ser	Glu	Ser	Leu	Arg	Glu	Thr	Val	Ser	Gln	Lys	Asp	Val	Cys	Val	Pro
	195					200					205				
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225				230					235					240	
Arg	Ala	Arg	Glu	Leu	Gln	Lys	Asp	His	Cys	Glu	Gln	Arg	Thr	Gly	Lys
		245					250						255		
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	260						265						270		

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 275 280 285
 Glu Gln Glu Leu Cys Ser Val Arg Leu Thr Leu Asn Gln Glu Glu Glu
 290 295 300
 Lys Arg Arg Asn Ala Asp Ile Leu Asn Glu Lys Ile Arg Glu Glu Leu
 305 310 315 320
 Gly Arg Ile Glu Glu Gln His Arg Lys Glu Leu Glu Val Lys Gln Gln
 325 330 335
 Leu Glu Gln Ala Leu Arg Ile Gln Asp Ile Glu Leu Lys Ser Val Glu
 340 345 350
 Ser Asn Leu Asn Gln Val Ser His Thr His Glu Asn Glu Asn Tyr Leu
 355 360 365
 Leu His Glu Asn Cys Met Leu Lys Lys Glu Ile Ala Met Leu Lys Leu
 370 375 380
 Glu Ile Ala Thr Leu Lys His Gln Tyr Gln Glu Lys Glu Asn Lys Tyr
 385 390 395 400
 Phe Glu Asp Ile Lys Ile Leu Lys Glu Lys Asn Ala Glu Leu Gln Met
 405 410 415
 Thr Leu Lys Leu Lys Glu Glu Ser Leu Thr Lys Arg Ala Ser Gln Tyr
 420 425 430
 Ser Gly Gln Leu Lys Val Leu Ile Ala Glu Asn Thr Met Leu Thr Ser
 435 440 445
 Lys Leu Lys Glu Lys Gln Asp Lys Glu Ile Leu Glu Ala Glu Ile Glu
 450 455 460
 Ser His His Pro Arg Leu Ala Ser Ala Val Gln Asp His Asp Gln Ile
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<210> 18
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 <400> 18
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<210> 19
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 <212> PRT
 <213> Homo sapiens
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 20 25 30

Pro	Arg	Pro	Ala	Gly	Pro	Ala	Arg	Arg	Gln	Phe	Gln	Ala	Ala	Ser	Leu
		35					40				45				
Leu	Thr	Arg	Gly	Trp	Gly	Arg	Ala	Trp	Pro	Trp	Lys	Gln	Ile	Leu	Lys
	50					55					60				
Glu	Leu	Asp	Glu	Cys	Tyr	Glu	Arg	Phe	Ser	Arg	Glu	Thr	Asp	Gly	Ala
65					70					75					80
Gln	Lys	Arg	Arg	Met	Leu	His	Cys	Val	Gln	Arg	Ala	Leu	Ile	Arg	Ser
				85					90					95	
Gln	Glu	Leu	Gly	Asp	Glu	Lys	Ile	Gln	Ile	Val	Ser	Gln	Met	Val	Glu
			100					105					110		
Leu	Val	Glu	Asn	Arg	Thr	Arg	Gln	Val	Asp	Ser	His	Val	Glu	Leu	Phe
		115					120					125			
Glu	Ala	Gln	Gln	Glu	Leu	Gly	Asp	Thr	Val	Gly	Asn	Ser	Gly	Lys	Val
	130					135					140				
Gly	Ala	Asp	Arg	Pro	Asn	Gly	Asp	Ala	Val	Ala	Gln	Ser	Asp	Lys	Pro
145					150					155					160
Asn	Ser	Lys	Arg	Ser	Arg	Arg	Gln	Arg	Asn	Asn	Glu	Asn	Arg	Glu	Asn
				165					170					175	
Ala	Ser	Ser	Asn	His	Asp	His	Asp	Asp	Gly	Ala	Ser	Gly	Thr	Pro	Lys
			180					185					190		
Glu	Lys	Lys	Ala	Lys	Thr	Ser	Lys	Lys	Lys	Lys	Arg	Ser	Lys	Ala	Lys
		195					200					205			
Ala	Glu	Arg	Glu	Ala	Ser	Pro	Ala	Asp	Leu	Pro	Ile	Asp	Pro	Asn	Glu
	210					215					220				
Pro	Thr	Tyr	Cys	Leu	Cys	Asn	Gln	Val	Ser	Tyr	Gly	Glu	Met	Ile	Gly
225					230					235					240
Cys	Asp	Asn	Asp	Glu	Cys	Pro	Ile	Glu	Trp	Phe	His	Phe	Ser	Cys	Val
				245					250					255	
Gly	Leu	Asn	His	Lys	Pro	Lys	Gly	Lys	Trp	Tyr	Cys	Pro	Lys	Cys	Arg
		260						265					270		
Gly	Glu	Asn	Glu	Lys	Thr	Met	Asp	Lys	Ala	Leu	Glu	Lys	Ser	Lys	Lys
		275					280					285			
Glu	Arg	Ala	Tyr	Asn	Arg										
		290													